

## **DETAILED ACTION**

### ***Claim Status***

This is in response to application filed on May 3, 2007 in which claims 1-30 were replaced with new claims 15-39 which are presented for examination.

### ***Information Disclosure Statement***

1. The information disclosure statement (IDS) submitted on 07/12/2006 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Objections***

2. Claim 17 is objected to because of the following informalities: in line 6 the phrase "the first the method" seems to have an extra "the".. Appropriate correction is required. Claim 22 is objected to because it is a dependent of a later claim 32.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 15-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Elliott et al. (US Patent Application Publication No. 2003/0128690).

**Regarding claims 15, 34 and 37**, Elliott teaches a method in a radio node, the first radio node, of transmitting beacon messages to at least a second radio node in an ad hoc or multihop network, wherein the ad hoc or multihop network comprises a plurality of further radio nodes, wherein the rate of which the radio node transmits its beacons is adaptive (as described in abstract), wherein the method in the first radio node comprises the steps of

- a) defining a subset,  $NB_v$ , of neighbours (as described in paragraph [0048]; Neighbor List);
- b) recording a plurality of beacon message from the radio nodes which are part of the subset, and determining the relative speed as compared to the first radio node of the radio nodes in the subset from the recorded respective plurality of beacon messages (as described in paragraphs [0061]-[0064]; varying the beacon transmission rate in response to the mobility rate);
- c) estimating the network dynamics, based on the relative speed of the radio nodes in the subset (as described in paragraph [0065]);
- d) determining beacon rate, based on the estimate of the network dynamics (as described in paragraphs [0066]-[0068]).

**Regarding claims 16, 24, 35 and 38**, Elliott teaches that the estimate of the network dynamics is based on analysis of the relative speed as compared to the first

radio node of a plurality of neighbouring radio nodes and wherein the neighbouring radio node that exhibit the highest relative speed compared to the first radio node, is given the greatest impact on the estimate of the network dynamics (as described in paragraphs [0062]-[0065]).

**Regarding claims 17 and 25**, Elliott teaches that the method comprises a step, to be performed prior to the determining step d), of: comparing estimates of network dynamics, wherein if the current estimate of network dynamics differ with at least a predetermined amount from a previous estimate of the network dynamics, the method proceeds to the determining step d), and otherwise the first the method continues to monitor the neighbouring radio nodes in the subset (steps a-c) (as described in paragraphs [0065]-[0068]).

**Regarding claims 18, 26 and 29**, Elliott teaches that the step of estimating the network dynamics, the estimate of the network dynamics is further at least partly based on the path loss history of the beacons received from the radio nodes in the subset (as described in paragraph [0062]; passing out of range which relates to path loss).

**Regarding claims 19, 27 and 30**, Elliott teaches that a step of storing beacon parameters of the respective beacon messages (as described in paragraph [0081]; based on historical information, stored).

**Regarding claims 20, 28 and 31**, Elliott teaches that the beacon parameters comprise at least one parameter relating to received signal strength of the beacon message, and at least one parameter relating to time of arrival of the beacon messages

(as described in paragraph [0081]; transmit power; inherently the reception characteristics includes arrival time).

**Regarding claims 21 and 32**, Elliott teaches that the beacon parameters comprise parameters that have been included by the sending radio node in the beacon message (as described in paragraphs [0048]-[0049]; e.g. Beacon Rate List).

**Regarding claims 22 and 33**, Elliott teaches that at least one parameter originally included by the sending radio node comprises a parameters relating to the position of the sending node as described in paragraph [0065]; e.g. past locations).

**Regarding claim 23**, Elliott teaches that the beacon transmit power at which the first radio node radio transmits its beacons is based on the estimate of the network dynamics (as described in paragraph [0081]; transmit power).

**Regarding claims 36 and 39**, Elliott teaches that the beacon receiving means is adapted to define a subset, NB<sub>n</sub>, of neighbouring radio nodes, and the storing means is adapted to record and store received beacon parameters from at least another radio node which is part of the subset (as described in paragraph [0048]; Neighbor List; and paragraph [0081]; based on historical information, stored)

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Redi** (US Patent No. 6,512,935) discloses system and method for Energy conserving Network Protocol.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JALAEDDIN AMIRMOKRI whose telephone number is (571)270-5880. The examiner can normally be reached on M-F 8am-5m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, PATRICK EDOUARD can be reached on (571)272-7603. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A./

10/22/09

/Patrick N. Edouard/  
Supervisory Patent Examiner, Art Unit 2617